



Volunteer Lake Assessment Program Individual Lake Reports

SEBBINS POND, BEDFORD, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	224	Max. Depth (m):	7	Flushing Rate (yr ⁻¹)	1.6	Year	Trophic class	KNOWN EXOTIC SPECIES
Surface Area (Ac.):	20	Mean Depth (m):	3.4	P Retention Coef:	0.65	1983	EUTROPHIC	
Shore Length (m):	1,300	Volume (m ³):	273,500	Elevation (ft):	195	1999	MESOTROPHIC	

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

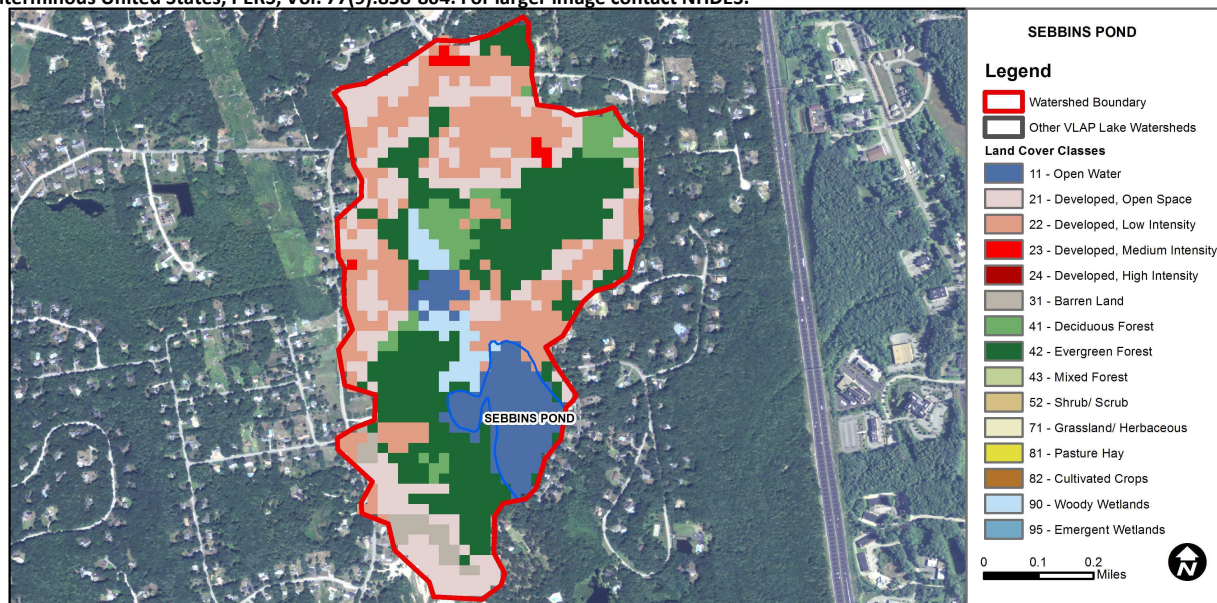
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Bad	>/=5 samples and median is >2x threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Very Good	At least 10 samples with 0 exceedances of criteria.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Bad	>/=5 samples and median is >2x threshold.
Primary Contact Recreation	E. coli	Good	Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred.
	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

SEBBINS POND - CAMP KETTLEFORD BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
SEBBINS POND - CAMP KETTLEFORD BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	10.1	Barren Land	2.33	Grassland/Herbaceous	0
Developed-Open Space	22.2	Deciduous Forest	5.3	Pasture Hay	0
Developed-Low Intensity	25.4	Evergreen Forest	29.98	Cultivated Crops	0
Developed-Medium Intensity	0.9	Mixed Forest	0	Woody Wetlands	3.59
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

SEBBINS POND, BEDFORD, NH

2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphic)

- ♣ **CHLOROPHYLL-A:** Chlorophyll levels were elevated and indicative of algal bloom conditions in June and July and then decreased in August. Historical trend analysis indicates chlorophyll levels fluctuate from year to year.
- ♣ **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride levels were elevated throughout the summer and were much greater than the NH lake median values.
- ♣ **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) phosphorus levels were elevated in June, but decreased to low levels in July and August and the 2012 average was equal to the NH lake median. Historical trend analysis indicates epilimnetic phosphorus levels fluctuate from year to year. Hypolimnetic (lower water layer) phosphorus was elevated in June and July and the turbidity was also elevated. A layer of algae at this depth may have caused the elevated phosphorus and turbidity. Inlet and Outlet phosphorus levels were average for both stations.
- ♣ **TRANSPARENCY:** Transparency improved as the summer progressed and was highest in August. Historical trend analysis indicates a significantly improving (increasing) transparency since monitoring began. We hope to see this trend continue!
- ♣ **TURBIDITY:** Epilimnetic turbidity was low throughout the summer while hypolimnetic turbidity was elevated in June and July. The elevated hypolimnetic turbidity was likely caused by a layer of algae located at that depth. Outlet turbidity increased in July and August potentially due to low flows.
- ♣ **pH:** pH tends to drop to undesirable levels in the hypolimnion.
- ♣ **RECOMMENDED ACTIONS:** Conductivity and chloride are elevated and may be indicative of the developed watershed. If possible, work with Town road agents to implement low salt zones in residential areas, as well as educate homeowners to utilize de-icing alternatives. Chlorophyll levels indicated high concentrations of algae in the water column and the pond has a history of cyanobacteria blooms. Report any potential cyanobacteria blooms to DES immediately. Educate watershed residents on ways to reduce stormwater runoff and nutrient loading from their properties. Utilize DES' "NH Homeowner's Guide to Stormwater Management" document.

Station Name	Table 1. 2012 Average Water Quality Data for SEBBINS POND							
	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.	Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m	ntu	
						NVS		
Back Pd Inlet			45	217.0	23		1.46	6.54
Deep Epilimnion	15.5	18.1	52	244.0	12	3.18	0.81	7.13
Deep Hypolimnion				236.0	32		2.75	6.52
Outlet			49	243.7	16		1.67	7.05

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

Alkalinity: 4.9 mg/L

Chlorophyll-a: 4.58 mg/m³

Conductivity: 40.0 uS/cm

Chloride: 4 mg/L

Total Phosphorus: 12 ug/L

Transparency: 3.2 m

pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

Chloride: < 230 mg/L (chronic)

E. coli: > 88 cts/100 mL – public beach

E. coli: > 406 cts/100 mL – surface waters

Turbidity: > 10 NTU above natural level

pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Improving	Data significantly increasing.
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.

This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:

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Historical Deep Spot
Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data

